

# STILL Why Johnny ^ Can't Write Requirements

Presented at SSTC 2010  
by  
**Ivy Hooks**  
of



Compliance Automation, Inc.

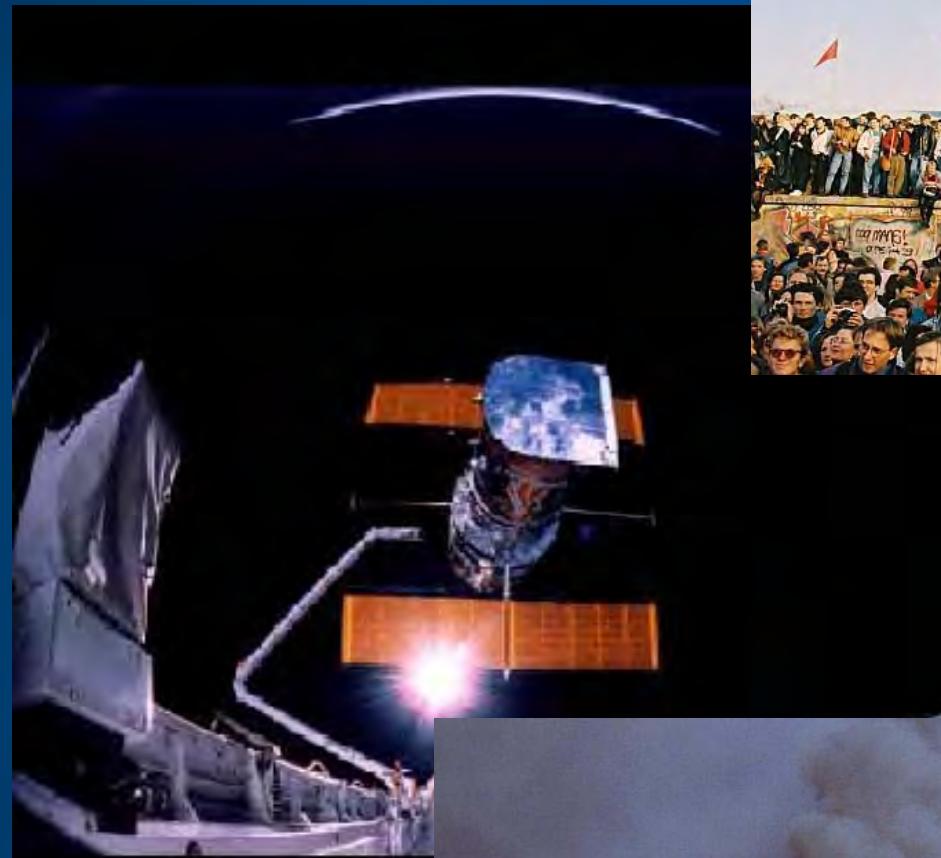
*The Requirement Experts*

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# Objectives

- Provide a 20-year history of the evolution of requirements
- Help you to understand what has and what has not changed
- Address what is needed in 2010 to have defect-free requirements

# 1990



# Requirement State-of-the Art - 1990

- Publications
  - Mil-STDs for systems and software
  - Two text books for software
  - Why Johnny Paper
- Significant Events
  - National Council for Systems Engineering (NCOSE)
  - 2<sup>nd</sup> USAF sponsored Software Technology Conference held (STC)
- Tools and Training
  - RDD -100 and Document Director and a few others
  - Government and company in-house plus 2 commercial

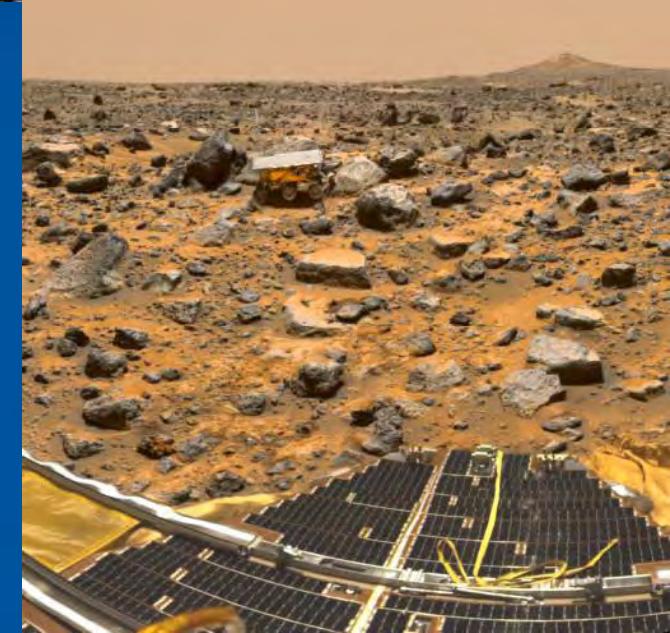
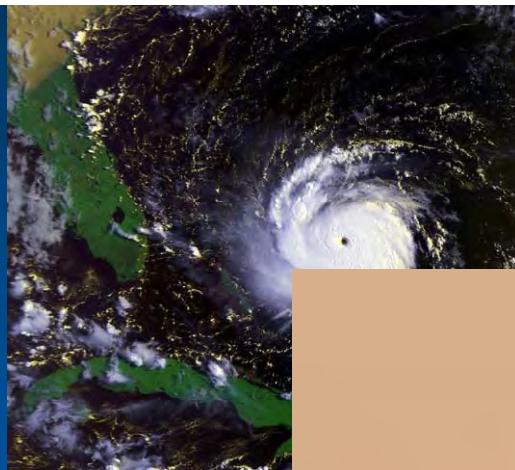
# Requirement Thinking - 1990

- GAO recognized poor requirements as contributing to failed products and cost and schedule overruns
- The right *Requirement Management Tool* (RMT) would fix everything
- *Quality* was the buzz word

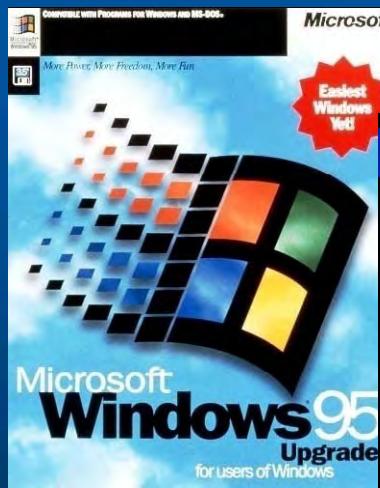
# Why Johnny Can't Write Requirements

- Identified problems
- Identified causes of problems
- Made suggestions for fixing problems
- Identified why Johnny can't write requirements

# 1991- 2000



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# Requirement State-of-the Art - 2000

- Publications
  - IEEE Stds for systems and software specifications
  - At least six significant books
- Significant Events
  - NCOSE becomes INCOSE
  - STC for all DOD
  - ISRE and ICRE formed
  - CMM and CMMI published
- Tools and Training
  - Ten or more tools on the market
  - A few companies adding requirements to list of courses

# Requirement Thinking 2000

- Requirements were a big issue in and out of the government
- Standish group reflecting software projects in particular
- GAO still pointing to requirement issues in government projects
- Requirements were divided into software and systems by those addressing them
- The software buzz words: *new method*
- The SE buzz words: *a tool that integrates everything*

2001-2010



# Requirement State-of-the Art - 2010

- Publications
  - 6+ more good books on requirements
  - Book of Knowledge for INCOSE and IIBA
  - More CMMI deliveries
- Significant Events
  - ICRE and ISRE merged into RE
  - IIBA formed
  - PMI acknowledged requirements in their BOK
  - STC became SSTC
  - System and software requirements processes are merging

# Requirement State-of-the Art – 2010 (cont)

- Tools
  - Ian Alexander currently lists over 40 RMTs at his web site-  
<http://easyweb.easynet.co.uk/~iany/other/vendors.htm>
  - INCOSE website lists 32 RMTs – [www.incose.org](http://www.incose.org)
  - Volere lists even more requirement tools  
[www.volere.co.uk/tools.htm](http://www.volere.co.uk/tools.htm)
- Training
  - More training companies adding requirement topic
  - More corporations with in-house requirement classes
  - More interest in advanced classes

# Requirement Thinking 2010

- GAO and others still point out problems
- Auditors and consultants still see some of the same old problems plus new ones
- *Agile* is wrongly interpreted as making requirements obsolete
- *Modeling* is the system and software buzz word
- *Certification* is a corporate cure-all

# Requirement Improvements 2010

- Some organizations have significantly improved their requirements
  - Committed to improvement
  - Followed proven practices
  - Practiced discipline with well-defined process
  - Made win-win for all
- Some organizations benefit from use of RMT
- More knowledgeable individuals who
  - Coach and mentor new hires and peers
  - Carry their knowledge to new environments



# Requirements 2010 – NETTDIR,AETTDIO

- Scope issues still exist
  - Don't understand problem and solution boundary
  - Understand but do not adequately document
  - Document but not provided to all who need it
- Lack of requirement validation
  - Lack of standards
  - Don't do inspections early
  - Rely on big ugly document reviews by untrained people
- Start design with defect-laden requirements
- Document requirements after the design
- Untrained personnel

# NEW bad requirement practices - 2010

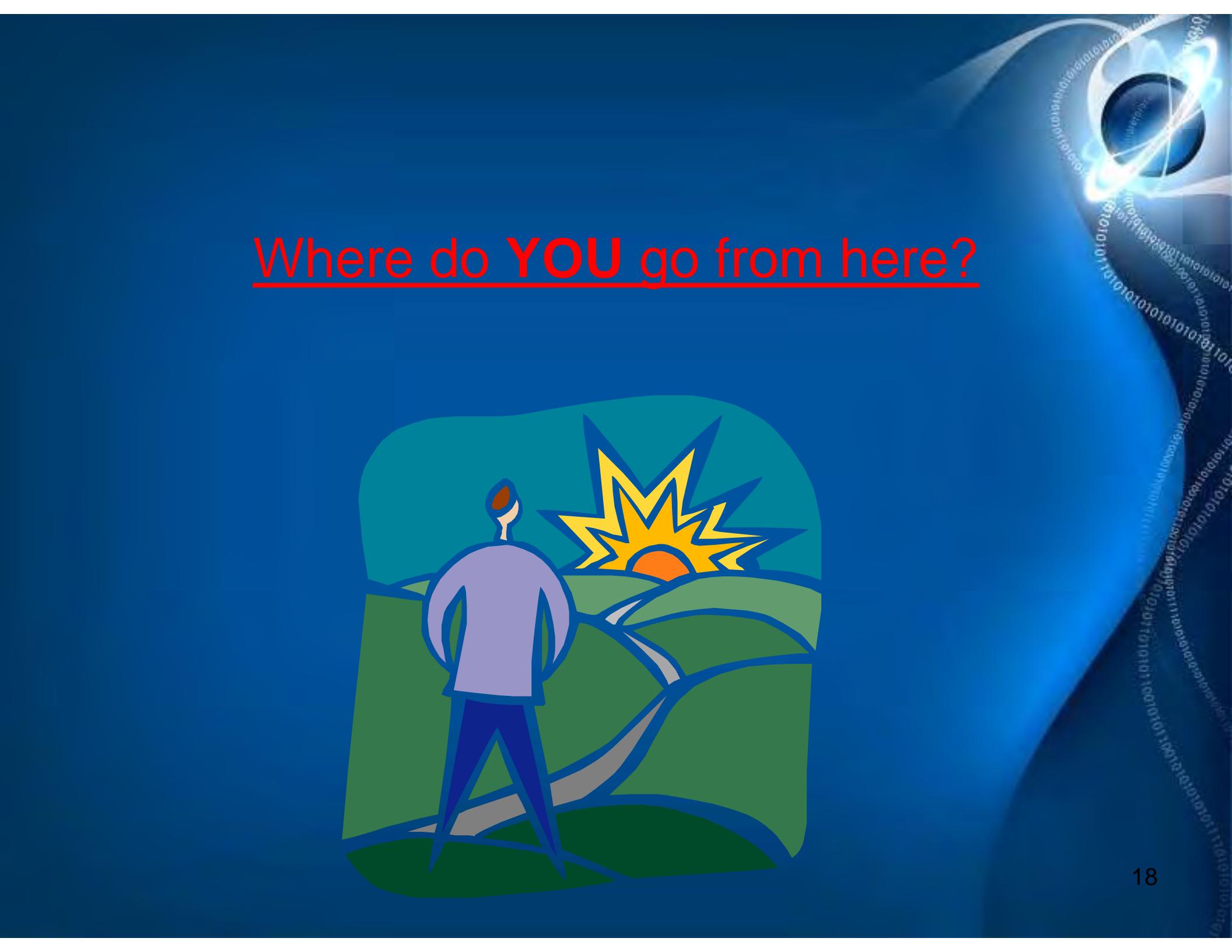
- Abandon proven practice – too hard
- Put in place junk process – invented on the fly
- Put in place practices because “RMT supports”
- GIGO
- Assuming “Process” is all that is needed
- Fail to maintain requirements – operate on requirement deltas – impossible to manage changes

## Why Johnny Can't Write Requirements - 1990

1. He doesn't know what to do
2. He doesn't understand why he should do it
3. He would rather be doing something else
4. He sees no reward

STILL

## Why Johnny^Can't Write Requirements - 2010



Where do YOU go from here?



## As a customer organization

- Use skilled personnel to audit your requirements – before you put out an RFP
- Provide clear scope of your project/product with your requirements – do not make the providers guess at your intent
- Provide rationale for each requirement – why it exists and is what it is – no one can read your mind
- Encourage questions about any and all your requirements

# As a provider organization

- If you propose sans customer scope, document the proposal team vision of the customer's scope so you can provide it to the design team
- Do not make assumptions about anything
- Ask questions
- Give the customer your interpretation and request clarification and correction - for scope and for each requirement
- Don't make *customer mistakes* when producing requirements for subcontractors

# As an individual

- Become proficient at writing and reviewing requirements
- Insist on others providing you with scope and rationale - or provide your best guess to them
- If you must make assumptions, document and distribute them
- Help others on your team become better at writing defect-free requirements

# ACRONYMS

AETTDIO – Always Enough Time to Do It Over

BOK – Book of Knowledge

CMM – Capability Maturity Model

CMMI – Capability Maturity Model Integration

DOD – Department of Defense

GAO – Government Accountability Office

GIGO – Garbage In Garbage Out

ICRE – International Conference on Requirements Engineering

IIBA – International Institute of Business Analysis

INCOSE – International Council on Systems Engineering

ISRE – International Symposium on Requirements Engineering

NCOSE – National Council on Systems Engineering

NETTDIR – Not Enough Time to Do It Right

PMI – Project Management Institute

RE – International Requirements Engineering Conference

RFP – Request For Proposal

RMT – Requirement Management Tool

STC – Software Technology Conference